

A new species of *Mimulus* L. (Scrophulariaceae) from Queensland, Australia

A.R. Bean

Summary

Bean, A.R. (2003). A new species of *Mimulus* L. (Scrophulariaceae) from Queensland, Australia. *Austrobaileya* 6(3): 549–552. A new species, *Mimulus aquatilis*, is described, illustrated and a distribution map provided. It is found in a restricted area of north Queensland, where it is associated with permanent springs. An identification key to the Queensland *Mimulus* species is provided.

Keywords: *Mimulus*, Scrophulariaceae, Queensland, taxonomy, new species, key.

A.R. Bean, Queensland Herbarium, Brisbane Botanic Gardens Mt Coot-tha, Mt Coot-tha Road, Toowong, Queensland 4066, Australia.

Introduction

Recent fieldwork devoted to the study of spring wetlands throughout Queensland (Fensham and Fairfax, in press) has revealed several new taxa belonging to various plant families. While the species described here was collected before this survey, it had not been recognised as distinct.

Mimulus is a large genus with members in each continent, and occurring in both tropical and temperate areas (Grant 1925), although

Australia has only a few representatives. Bentham (1868) listed four native Australian species, and only the poorly known *Mimulus clementii* Domin from Western Australia has been added since that time.

Five *Mimulus* species are indigenous to Queensland. There are no naturalised taxa in Queensland, but two naturalised species (*M. guttatus* DC. and *M. moschatus* Lindl.) occur in south-eastern Australia.

Taxonomy

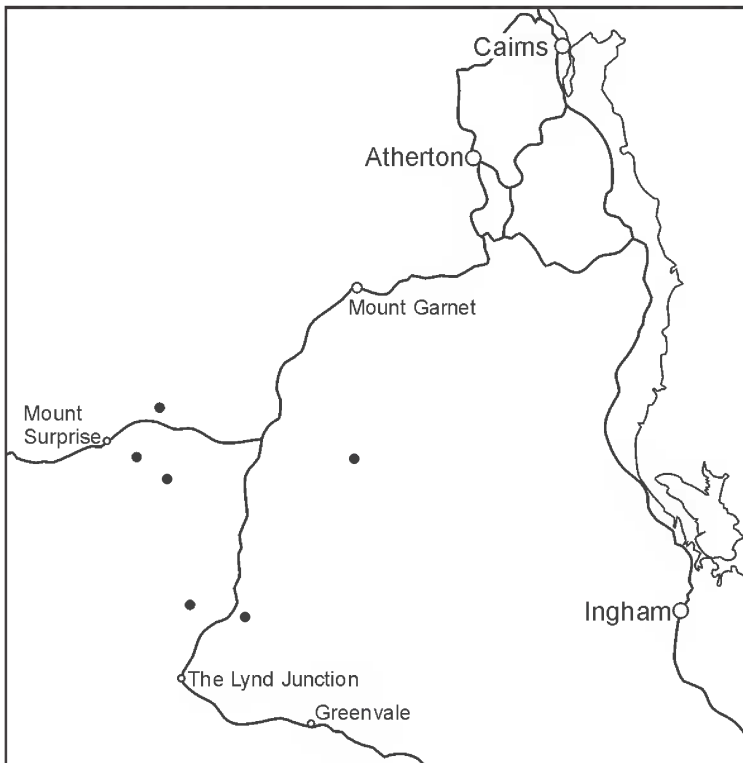
Key to Queensland species of *Mimulus*

1. Leaves 1–3 mm long **M. repens** R.Br.
Leaves 4–45 mm long 2
2. Leaves and/or branchlets hairy **M. prostratus** Benth.
Leaves and branchlets glabrous 3
3. Leaves with 3–5 longitudinal veins, serrulate, 1.5–3 times longer than wide;
habitat aquatic **M. aquatilis**
Leaves with only midvein visible, entire, 5–14 times longer than wide; habitat terrestrial ... 4
4. Marginal ciliae on calyx teeth 0.2–0.3 mm long; corolla 6–9 mm long; growing
on sandy soils **M. uvedaliae** Benth.
Marginal ciliae on calyx teeth absent or up to 0.1 mm long; corolla 10–12 mm
long; growing on heavy clay soils **M. gracilis** R.Br.

Mimulus aquatilis A.R.Bean **sp. nov.** affinis *M. gracili* autem foliis late ovate serrulatis venis 3–5 longitudinalibus instructis, calyce longiore, habitu aquatico differt. **Typus:** Queensland. NORTH KENNEDY DISTRICT: GW Spring, 'Minnamoolka', S of Mt Garnet, 24 May 2001, *R.J. Fensham* 4416 (holo: BRI (1 sheet + spirit); iso: AD).

Erect or sprawling herb to 50 cm high, rooting freely at the nodes on lower parts. Stems quadrangular to grooved, glabrous. Leaves ovate to broadly-ovate, prominently 3-veined throughout and 5-veined in lower half, 14–45 × 5–26 mm, 1.5–3 times longer than broad; apex obtuse, base obtuse to auriculate; margins serrulate, with 4–11 pairs of teeth each up to 1.5 mm long. Leaf lower surface glandular-punctate. Inflorescences solitary, axillary. Flowers with pedicels 3–9 cm long, 2–4 times longer than subtending leaf, not elongating after anthesis, bracteoles absent. Calyx fused throughout most

of its length, 6.0–8.2 mm long (including teeth), cylindrical, 5-ribbed, not elongating after anthesis; calyx teeth deltate, 1.2–1.8 mm long, apex acute, marginal ciliae absent or up to 0.05 mm long. Corolla gamopetalous, 5-lobed, but distinctly 2-lipped with the lower lip longer and somewhat recurved, blue with a yellow centre, 13–16 mm long; tube bisulcate, outer surface glabrous or very sparsely furnished with short glandular hairs; inner surface with very numerous patent ensate eglandular hairs. Stamens 4, epipetalous, all perfect, in two pairs, the lower pair slightly longer, not or slightly exerted from corolla. Anther cells 2, confluent. Style glabrous, exerted; stigma comprising 2 thin spatulate flaps. Ovary smooth, surface sparsely glandular. Capsule smooth, 2-locular, at maturity c. 7 mm long, not extending beyond calyx. Seeds ellipsoidal, yellow-brown, 0.35–0.45 mm long, with minute papillae in longitudinal rows. **Fig. 1.**



Map 1. Distribution of *Mimulus aquatilis*



Fig. 1. *Mimulus aquatilis*. A. flowering stem $\times 0.6$. B. lateral view of an open flower $\times 4$. C. flower slit longitudinally to show ovary, style and stamens $\times 4$. A, *Fensham* 4537; B-C, *Fensham* 4416.

Specimens examined: Queensland. COOK DISTRICT: Twelve Mile Spring, Undara NP, Jun 2001, *Fensham* 4518 (BRI); Big Oasis Spring, 'Rocky Springs', E of Mt Surprise, Jun 2001, *Fensham* 4537 (BRI); Elizabeth Spring, 'Mt Surprise', Jul 2001, *Fensham* 4576 (BRI); Swamp Ck, on road to Spring Creek HS, Sep 1976, *Williams* 76091 (BRI). NORTH KENNEDY DISTRICT: 'Conjuboy', Jan 1993, *Fensham* 392 (BRI); spring near 'Conjuboy' homestead, Mar 2001, *Fensham* 4665 (BRI).

Distribution and habitat: Endemic to Queensland and confined to the Mt Garnet–Mt Surprise–Greenvale area (**Map 1**). It grows only in springs associated with basalt, where there is permanently flowing water. The lower parts of the plant are usually submerged.

Phenology: Flowers and fruits have been recorded at various times of the year.

Affinities: *M. aquatilis* is closely related to *M. gracilis*, but differs by the leaves 1.5–3 times longer than broad (6–14 times for *M. gracilis*), with 3–5 longitudinal veins (midvein only for *M. gracilis*), and with serrulate margins (entire margins for *M. gracilis*), and by the calyx 6.0–8.2 mm long (4–6 mm for *M. gracilis*).

Conservation status: Applying the guidelines of the IUCN (Anon. 2001), a status of "Vulnerable" is recommended, (VUC1; D1+2).

Austrobaileya 6 (3): 549–552 (2003)

The main threat to *Mimulus aquatilis* is the introduction into the springs of the aggressive *Brachiaria mutica* (Forssk.) Stapf (para grass).

Etymology: From the Latin *aquatilis*, meaning "growing in water".

Acknowledgements

Thanks to Rod Fensham for advice on habitat and conservation status. Will Smith (BRI) provided the illustrations of this species. Les Pedley provided the Latin translation of the diagnosis.

References

- ANONYMOUS (2001). IUCN Red List Categories and Criteria. International Union for Conservation of Nature and Natural Resources: Switzerland.
- BETHAM, G. (1868). *Mimulus*. in *Flora Australiensis* 4: 481–3. L.Reeve & Co.: London.
- FENSHAM, R.J & FAIRFAX, R.J. (in press). Spring wetlands of the Great Artesian Basin, Queensland, Australia. *Wetland Ecology and Management*.
- GRANT, A.L. (1925). A monograph of the genus *Mimulus*. *Annals of the Missouri Botanic Gardens* 11: 99–388.